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WALL MARJAMA & BILINSKI 101 SOUTH SALINA STREET SUITE 400 SYRACUSE, NY 13202			FINEMAN, LEE A	
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			2872	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/056,868

Applicant(s)

BENDALL ET AL.

Examiner

Lee Fineman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4,41-43,47,49,80-82,84 and 86-158 is/are pending in the application.
- 4a) Of the above claim(s) 4,41-43,47,49,80-82,84 and 86 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 87-158 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/18/05</u> | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This Office Action is in response to an amendment filed 15 March 2005 in which claims 87-158 were added and claims 1-3, 5-40, 44-46, 48, 50-79, 83 and 85 were cancelled. Claims 4, 41-43, 47, 49, 80-82, 84 and 86-158 are pending of which claims 4, 41-43, 47, 49, 80-82, 84 and 86 are withdrawn. It is noted that the withdrawn claims are now dependent upon claims that have been cancelled and would be improper if subsequently subject to rejoinder.

#### *Claim Objections*

1. Claims 87-129 and 137-145 are objected to because of the following informalities:

Regarding claims 87-129, "said single electronic imager" lacks antecedent basis.

Regarding claim 103, line 2, "said system issued in" is incorrect and should be --said system **is used** in--.

Regarding claims 101-110, 112 and 137-145, "said probe" lacks antecedent basis.

The dependent claims inherit the deficiencies of the claims from which they depend.

Appropriate correction is required.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 87-158 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Newly amended independent claims 87 and 130 include the limitation "at least one electronic imager." However, the specification and drawings disclose only ONE imager (especially note on page 3, line 6 of the specification where it states "the two images focus on one imager..."). Therefore, the language "at least one electronic imager" is considered new matter because it would include two or more electronic imagers, which has not been disclosed.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 87-90, 92, 94-96, 130 and 132-134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi, US 5,522,789 in view of Kawatani, JP 63220217 A.

Takahashi discloses a stereoscopic device for viewing an object, said system comprising an image splitting means (28 and 27A) for acquiring a first (R) and second (L) image of a distant object (11) which are symmetrical (fig. 13 (c)); at least one electronic imager (31) disposed along a single optical axis (fig. 13(a)); and at least one focusing lens (5 and fig. 13(b)) for focusing said first and second acquired images from said image splitting means (28 and 27A) to said single electronic imager (31); wherein the views of said first (R) and second (L) images converge at a given object distance such that said views overlap 100% at said object distance (fig. 13(a));

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wherein said imaging system is disposed in an elongated probe (figs. 13(a)-(c)); a display means (35) for viewing said first and second images as detected by said electronic imager; wherein only one of said first and second images is displayed (column 14, lines 30-31); and further comprising a viewing means (39, fig. 14) for viewing said first and second images such that said first (R) image goes to a right eye of a viewer and left (L) image goes to a left eye of said viewer, wherein said viewer is provided with a three dimensional perspective (column 11, lines 54-63). Takahashi discloses the claimed invention except wherein the image splitting means is disposed along a single optical axis and is a refractive image splitting prism that has two flat refractive optical surfaces, each of said optical surfaces being disposed at an angle with respect of said single optical axis to permit the first and second images of a distant object to be acquired, said optical surfaces of said image splitter being further arranged to cause said first and second acquired images to converge toward said single optical axis. Kawatani teaches a system (figs. 1-4) with a refractive image splitting prism (2) on a single optical axis (figs. 1-4) that has two flat refractive optical surfaces (figs. 1-4), each of said optical surfaces being disposed at an angle with respect of said single optical axis to permit the first and second images of a distant object to be acquired (figs. 1-4), said optical surfaces of said image splitter being further arranged to cause said first and second acquired images to converge toward said single optical axis (right after element 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the image splitting means of Takahashi with the refractive image splitting prism of Kawatani to reduce the number of parts and provide a provide more a smaller, compact system. The method of utilizing the structure of the claim is inherent therein.

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6. Claims 91, 97-99, 101-116, 125-129, 135-147 and 152-158 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Kawatani as applied to claim 87, 90, 95 and 130 above, and further in view of Sakiyama et al., US 6,063,023.

Regarding claim 91, Takahashi in view of Kawatani as applied to claim 90 above disclose the claimed invention except wherein said image splitter is contained within a detachable distal tip which is usable with said probe. Sakiyama et al. teach a device for viewing an object with a probe (figs. 4 and 5) wherein a image splitter (21, 22) is contained within a detachable distal tip (4, column 6, lines 55-56) which is usable with said probe (figs. 4 and 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the refractive image splitting prism in the distal tip of Takahashi in view of Kawatani and make it detachable as suggested by Sakiyama et al. to be able to quickly change tips for different imaging needs (column 2, lines 27-31, Sakiyama).

Regarding claim 97, Takahashi in view of Kawatani as applied to claim 95 above discloses the claimed invention except wherein at least one of first and second portions of said image are displayed at a different magnification from said first and second images, and in which both said first and second portions and said first and second adjacent stereo image parts are being displayed simultaneously. Sakiyama et al. further teach wherein at least one of first and second portions of said image are displayed at a different magnification from said first and second images, and in which both said at least one of first and second portions and said first and second images are being displayed simultaneously (column 8, lines 36-38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make and view the

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images parts of Takahashi in view of Kawatani different magnification to provide flexibility in examining object characteristics.

Regarding claims 98-99, 101-107, 109-110, 112, 135-143 and 145, Takahashi in view of Kawatani as applied to claim 87 above discloses the claimed invention except for further comprising a measurement means with an optical character set including optical mapping distortion, magnification at one or more object target distances and parallax information, for comparing parameters of said first and second images so that measurement data of said object are determined, wherein said measurement data includes at least one geometric characteristic of said object; wherein said device receives and uses one of a plurality of detachable distal tips/probes, wherein each of said tips/probes has a corresponding optical character data set and wherein data determined from said image is used to select which optical characteristics data set corresponds to said detachable tip in said probe; wherein the optical characteristics data set is adjusted said probe is operable in a medium with an index of refraction other than air; wherein the optical characteristics data set is stored in non-volatile memory; and further comprising a calibration means for generating said optical characteristics data set of said device, wherein said calibration means includes a plurality of object target points which appear in both of said first and second stereo image parts when viewed with said probe; wherein said plurality of object target points comprises at least two object target points with known spacing between them at a first object target distance and at least two object target points with known spacing between them at a second target distance, wherein a distance between said first and second object target distances is known and wherein one of said first and second object target distances is known and includes using a reflection of illumination of at least one known object target distance and a

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means for color balancing. Sakiyama et al. teach a measurement means (figs. 8-13) with an optical character data set (S104) including optical mapping distortion, magnification at one or more object target distances and parallax information (column 6, lines 15-21) and for comparing parameters of said first and second images so that measurement data of said object are determined, wherein said measurement data includes at least one geometric characteristic of said object (length, column 12, lines 10-16 and lines 47-60); wherein said device receives and uses one of a plurality of detachable distal tips (4, column 6, lines 55-56) making a plurality of probes, wherein each of said tips/probe has a corresponding optical character data set and wherein data determined from said image is used to select which optical characteristics data set corresponds to said detachable tip in said probe (column 6, lines 1-53); wherein the optical characteristics data set is stored in non-volatile memory column 6, lines 9-14); and further comprises a calibration means (figs. 6A, 6B, 7A, 7B) for generating said optical characteristics data set of said device, wherein said calibration means includes a plurality of object target points which appear in both of said first and second images when viewed with said probe (column 7, lines 61-column 9, lines 42) wherein said plurality of object target points comprises at least two object target points with known spacing between them at a first object target distance and at least two object target points with known spacing between them at a second target distance, wherein a distance between said first and second object target distances is known and wherein one of said first and second object target distances is known (fig. 7A) and includes using a reflection of illumination of at least one known object target distance (in so far as an image is a reflection of illumination) and a means for color balancing (column 9, lines 36-42 and column 11, lines 14-20 with column 14, lines 56-58, in so far as the color must be balances to compare the luminance).



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It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the measuring means, calibration means and detachable tips with optical characteristics data sets of Sakiyama et al. in the system of Takahashi in view of Kawatani to be able to quickly and accurately measure different specific characteristics of the object. Further, regarding claims 112 and 140, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the optical characteristics data set so the probe is operable in a medium with an index of refraction other than air, since it is been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to adjust the data set for the purpose of providing accurate data for calibration and measurement when using different probes. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 108 and 144, Takahashi in view of Kawatani and Sakiyama et al., as applied to claims 103 and 137 above, disclose the claimed invention but do not explicitly state whether detection of the plurality of object target points are automatic. It would have be obvious to one having ordinary skill in the art at the time the invention was made to automate the detection of the plurality of object target points since it has been held that broadly providing a mechanical or automatic means to replace manual activity which accomplishes the same result involves only routine skill in the art. One would have been motivated to automate the detection of the plurality of object target points in order to more quickly establish calibration of the images. *In re Venner*, 262 F.2d, 91, 95, 120 USPQ 193, 194 (CCPA 1958)

Regarding claims 111, 129 and 158, Takahashi in view of Kawatani and Sakiyama et al. as applied to claim 98 above, does not explicitly state that the optical characteristics data set, the

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first and second images and said determined measurements are stored in a single file. Official Notice is taken that storing many different values in a single file is well known. It would have been obvious to one having ordinary skill in the art at the time the invention was made to store the optical characteristics data set, the first and second image parts and said determined measurements in a single file to consolidate memory space and provide easy data manipulation. It is noted as directed by the MPEP 2144.03 that if the applicant does not seasonably traverse the well-known statement during examination, then the object of the well-known statement is taken to be admitted prior art. *In re Chevenard*, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). As such, the above official notice statement of the examiner is now held to be admitted prior art.

Regarding claim 113-116, 146-147 and 152-154, Takahashi in view of Kawatani and Sakiyama et al., as applied to claims 98 and 135 above, further disclose wherein said measuring means includes matching means (Sakiyama, figs. 14A, 14B, 19 and 20, column 13, line 24-column 14, line 4) for automatically matching a same user-designated point (PP1, PP2) viewed on said object in each of said first and second images and means for requesting user selection of a correct matched point from a plurality of automatically-identified possible matches (Sakiyama, column 14, lines 35-40, in so far as when the correlation is smaller than a given value, the user can manually pick a match from the small area being viewed, which is a plurality of possible matches) and determining an overlap region of the images in which measurement are performed (column 14, lines 4-16). Regarding claim 116, for each point picked the matching will occur (figs. 14A, 14B).

Regarding claims 125-126 and 155-156, Takahashi in view of Kawatani and Sakiyama et al., as applied to claims 98 and 135 above, further disclose wherein said measuring means

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includes means for indicating a measurement accuracy of said measurement (column 14, lines 35-37) and wherein said measuring means includes mean for an operator to designate a maximum estimated error limit above which said device indicates a warning (column 14, lines 35-40, in so far as coefficient of normalization correlation is below a given value which must have been designated by at least the first operator).

Regarding claim 127-128 and 157, Takahashi in view of Kawatani and Sakiyama et al., as applied to claim 98 above, further disclose wherein said measuring means includes using at least one onscreen cursor (column 17, lines 29-30) and a menu bar (64, fig. 23B) but does not explicitly state whether a symbol, which indicates both a type of measurement being performed and a role of said cursor in said type of measurement and wherein at least one measurement point designated by a user when performing one type of measurement is kept event when a different type of measurement is selected. Graphic User Interface (GUI) systems that use menus, symbols and cursors and “point and click” selections allow the user to quickly navigate the monitor’s images/windows and perform tasks in an easy to understand way are well known to one of ordinary skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the system of Takahashi in view of Kawatani and Sakiyama et al. a GUI system to allow the user easy understanding and navigation of the monitor’s images/windows, including the “point and click” technology which would hold a measurement point while changing tasks.

7. Claims 93 and 131 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Kawatani as applied to claim 90 above, and further in view of Miyano et al., US 5,840,014.

Takahashi in view of Kawatani as applied to claim 90 above disclose the claimed invention except for further comprising a window disposed between said image splitter and said object, wherein contact is prevented between external media and said image splitter. Miyano et al. teach a device for viewing an object with a probe (figs. 1 and 2) further comprising a window (11) disposed between the elements (5-7) and an object, wherein contact is prevented between external media and the elements (fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a window between said image splitter and the object in the system of Takahashi in view of Kawatani to protect said image splitter and other elements of the system from being contaminated (column 1, lines 17-22, Miyano).

8. Claims 100, 117-120, 122-124 and 148-151 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Kawatani and Sakiyama et al., as applied to claim 114 above, and further in view of Hori et al., US 6,191,809 B1.

Regarding 117-119, 122-124 and 148-151 Takahashi in view of Kawatani and Sakiyama et al., as applied to claim 114 above disclose the claimed invention except for said automatic matching means including a global alignment means for performing an automatic global alignment of said first and second images and including a means for determining vertical and horizontal shifts between the first and second images; wherein the data derived from said global alignment means is used to make automatic matching faster and reduce a probability of incorrect

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matches of subsequent user-defined points. Hori et al. teaches a stereoscopic device (fig. 1) that includes global alignment means for performing an automatic global alignment of said first and second images (column 5, lines 43-54) and including a means for determining vertical and horizontal shifts between the first and second images (figs. 9A and 9B, column 7, line 6-column 7, line 49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the global alignment means of Hori et al. in the system of Takahashi in view of Kawatani and Sakiyama et al. to further correct for any visual image misalignment. Also, regarding claims 122 and 123, the addition of the global alignment means would reduce the probability of incorrect matches of subsequent user-defined points and make the matching faster because the image parts would already be visually more aligned and less calculations would be necessary. Regarding claim 124, the data from the global alignment means would be incorporated into the position of the images for determining overlap as stated above with regard to claim 154.

Regarding claim 100, Takahashi in view of Kawatani and Sakiyama et al. and Hori et al., as applied to claim 117 above disclose the claimed invention except for a difference between said optical characteristics data set and the global alignment data being determined and signaling a user. It is well known to one of ordinary skill in the art to compare variables within a system to ensure the accuracy of the data in the system and to further notify the user of the results. It would have been obvious to one of ordinary skill in the art at the time the invention was made to compare said optical characteristics data set and the global alignment data to verify the accuracy of the data and to further notify the user of a difference to be able to correct any problems quickly.

Regarding claim 120, Takahashi in view of Kawatani and Sakiyama et al. and Hori et al., as applied to claim 117 above disclose the claimed invention but are silent as to whether the points used in the global alignment process are user-designated matched points or automatically determined points. Since either set of points yields the same results, it would have been obvious to one of ordinary skill in the art at the time the invention was made use any of the above sets of matching points in order to provide correct input data for the global alignment process.

9. Claim 121 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Sakiyama et al. and Hori et al., as applied to claim 31 above, and further in view of Ko, U.S. Patent No. 5,710,428.

Takahashi in view of Kawatani, Sakiyama et al. and Hori et al., as applied to claim 117 above disclose the claimed invention except for wherein a correction by a user of an incorrect automatic match automatically invokes said global alignment means. Automated feedback loops that include user override are well known for providing automatic control over a variable while still being able to correct for unforeseen problems. For example, Ko uses an automatic feedback loop to correct the image displayed in the system (column 2, lines 43-52) as well as a user override to provide even better images when needed (column 2, lines 53-60). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a user override within the automatic system of Takahashi in view of Kawatani, Sakiyama et al. and Hori et al. to correct for unforeseen problems like an incorrect match.

*Response to Arguments*

10. Applicant's arguments with respect to claims 87-158 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LAF

May 24, 2005



MARK A. ROBINSON  
PRIMARY EXAMINER